

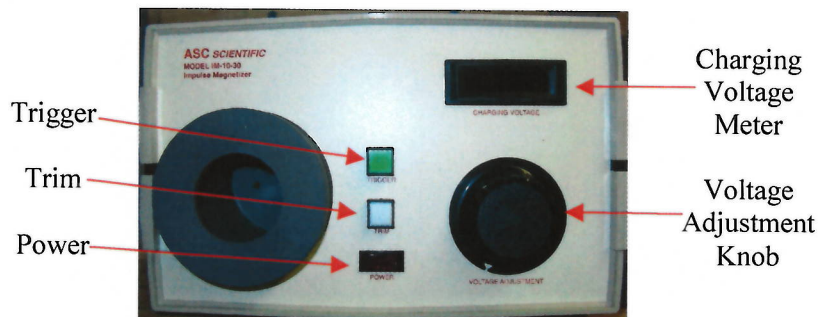
OPERATING INSTRUCTIONS
ASC MODEL IM10-30 IMPULSE MAGNETIZER

INTRODUCTION

The ASC IM10-30 Impulse magnetizer is designed to produce a short duration high-field pulse for the purpose of magnetizing geological samples. It is ideally suited for the study of acquisition of Isothermal Remanent (IRM and anisotropy of IRM acquisition. The unit is rated to deliver accurate reproducible fields from 30 Gauss to 50 Kgauss, using each of four coils for different field ranges. Each coil is provided with a sample holder which allows the sample to be held in a reproducible position and orientation.

The field is produced by the discharge of energy from a capacitor bank through a coil surrounding the sample cavity. The capacitor bank is first charged to the desired voltage (corresponding to the desired field). It is then discharged through the coil very rapidly using a high capacity SCR as a switch. Because very high current levels are involved, the coil and all circuitry are totally contained in a single case.

FRONT PANEL DESCRIPTION



Power - This switch turns the unit on. No warm up period is necessary.

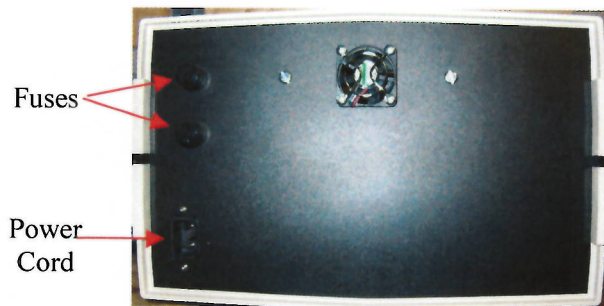
Voltage Adjustment Knob - This knob adjusts the approximate charging voltage.

Charging Voltage Meter - This meter displays the actual voltage to which the capacitor bank is charged. For a given setting of the voltage adjustment knob, the displayed charging voltage increases asymptotically as the capacitors are charged.

Trigger - This switch triggers the discharge of the capacitor bank through the coil.

Trim - This switch allows the user to back off the charging voltage without triggering the circuit. It is useful if you inadvertently allow the system to charge to a voltage higher than the desired value. By holding the button down, the capacitor bank can be discharged slowly as observed on the meter.

BACK PANEL DESCRIPTION



Power Cord - Unless otherwise specified, the unit is designed for 100/120VAC 50/60Hz power.

Fuses - Upper fuse should be replaced with a 5 AMP rated fuse.

Lower fuse should be replaced with a 1 AMP Slo-Blo fuse.

Note: For 220 models upper fuse should be replaced with a 3 AMP rated fuse, lower fuse should be replaced with a 1 AMP Slo-Blo fuse.

CALIBRATION

Calibration data is provided for each coil relating charging voltage to field level. Charging voltages corresponding to specific field levels desired by the user can be computed from this data by interpolation.

Approximate field ranges for each of the four available coils are as follows:

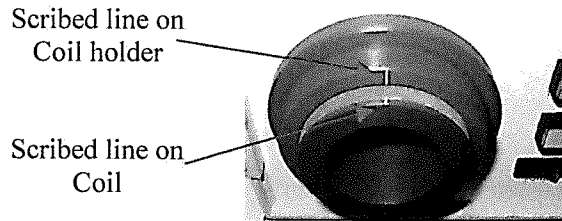
Coil #1	30 - 600 Gauss
Coil #2	0.5 - 11 Kgauss
Coil #3	1.5 - 28 Kgauss
Coil #4	3 - 50 Kgauss

OPERATIONAL NOTE

There is a lag time between adjusting the voltage knob and charging of the capacitors to a given voltage. The set voltage is approached asymptotically over a 30 to 40 second time period. This voltage buildup can be monitored via the digital meter. The most accurate and reproducible results will be obtained if the adjusting knob is set to a point slightly above the desired voltage, such that the desired voltage is approached at a rate of approximately 0.5 volt/sec. The trigger should then be at the first appearance of the desired voltage on the digital meter. Calibration data are based on triggering using this technique and this has been found to provide highly reproducible results.

Before operating the Impulse Magnetizer for the first time with actual samples, the operator should go through this charging/trigging sequence to learn the charging characteristics of the instrument.

COIL INSTALLATION AND REMOVAL



1. Hold the coil with the scribed line on the edge of the front face of the coil pointing up (12 o'clock).
2. Push the coil into the cavity on the front panel of the unit until the coil protrudes out of the cavity about 2 cm. Align the scribed line on the coil with the scribed line on the front face of the cavity and push the coil in the remaining distance until it protrudes by only about 2 mm.
3. Screw on the retaining ring until it tightens against the face of the coil. Hand tighten lightly only! You are now ready to use the instrument.
4. To remove a coil, unscrew the retaining ring. To remove the #1 or #2 coils, insert the first two fingers of each hand into the sample cavity with your thumbs against the front face of the cavity. Pull the coil straight out. To remove the #3 coil, turn the handle of the coil extractor counterclockwise a couple of turns while holding the rubber end. Insert the extractor into the sample cavity and while pressing it against the side of the cavity, turn the handle clockwise until it is snug. Pull the coil out about 5 cm. Unscrew the handle a few turns until the extractor can easily be removed. Pull the coil straight out. To remove the #4 coil insert the plastic handle of the extractor slowly into the sample cavity. With a quick jerk pull the coil out of the cavity about 5 cm. Slowly pull the extractor from the coil. Pull the coil straight out.

OPERATING PROCEDURE

1. Turn the power switch on.
2. Place the sample in the holder in the desired position. Insert the holder into the sample cavity until it stops.
3. Set the voltage adjustment knob so that the ascending voltage displayed on the meter approaches the desired charging voltage slowly (approximately 0.5 volt/second).
4. Push the trigger button at the very first appearance of the desired voltage.
5. If you overshoot the desired voltage, push the trim button until the displayed voltage drops below the desired value. Allow the charging voltage to ascend to the desired value and trigger.
6. Remove the sample for measurement.
7. At the end of each work session, turn the voltage adjustment knob fully counterclockwise and trigger the circuit before turning off the power.

SERVICE

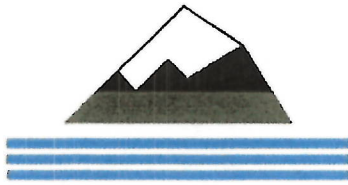
Because of the potential dangers associated with the large capacitor contained in the instrument, we do not recommend that the user attempt to service it. If the instrument malfunctions, return it to the factory for service or call us for instructions.

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ASC SCIENTIFIC MODEL IM10-30 IMPULSE MAGNETIZER
CALIBRATION DATA 6-27-16
SERIAL #001U (upgrade)

2.00" COIL #2

Voltage	Field(KGauss)
10	.311
15	.478
20	.650
25	.815
50	1.653
75	2.493
100	3.333
150	4.994
200	6.677
250	8.363
300	10.04
350	11.70

1.25" COIL #3

Voltage	Field(KGauss)
10	.690
15	1.069
20	1.456
25	1.825
50	3.687
75	5.584
100	7.494
150	11.34
200	15.18
250	19.03
300	22.82
350	26.66

0.55" COIL #4

Voltage	Field(KGauss)
10	1.267
15	1.989
20	2.681
25	3.382
50	6.921
75	10.47
100	14.01
150	21.07
200	28.04
250	34.91
300	41.63
350	48.28